

WHAT IS CLAIMED IS:

*Sub A*

1. A camera control apparatus comprising:  
an image data receiving section for receiving from an image transmitter image data captured by cameras;
- 5 an image data playback section for display, on a screen, the received images;  
a camera control area display section for displaying camera symbols, which correspond to information representing the locations of the cameras, and the directions in which the cameras
- 10 are oriented, as a control region for controlling the cameras connected to the image transmitter;
- 15 a command load section for loading the coordinates of a location in the control region designated by an operator;
- 20 a camera-to-be-operated determination section for determining a camera optimal for shooting the designated location;
- 25 a control command conversion section for converting information about the coordinates loaded by the command load section, into a control command signal capable of being used for controlling the cameras; and
- 30 a control command transmission section for transmitting the converted control command signal to the image transmitter.

2. The camera control apparatus as defined in claim

00000000000000000000000000000000

1, wherein said camera-to-be-operated determination section  
determines a camera to be panned, on the basis of an angle between  
an imaginary line connecting the center of the camera symbol with  
the designated location and the direction in which the cameras  
5 is currently oriented.

3. The camera control apparatus as defined in claim  
1, further comprising an employable camera survey section which  
stores information about the positions of impediments existing  
10 in the area to be shot by the plurality of cameras and which  
eliminates a camera incapable of shooting the designated location  
from candidates considered by the camera-to-be-operated  
determination section.

15 4. The camera control apparatus as defined in claim  
3, wherein, in the event of presence of an impediment in the area  
where the cameras are disposed, the impediment is displayed.

5. The camera control apparatus as defined in claim  
20 1, further comprising:

an angular-shift-time calculation section for  
calculating the time required for the camera to pan toward the  
designated location;

a focus storage section for grasping the focus of a

plurality of cameras; and

a focus-shift-time calculation section for calculating the time required for the camera to attain a focus on the designated location,

5 wherein the camera-to-be-operated determination section determines a camera which can shoot the designated location in the minimum time as a camera to be operated, on the basis of the time required for the camera to pan toward the designated location, as well as the time required for the camera to attain a focus on  
10 the designated location.

6. The camera control apparatus as defined in claim 5, wherein there are displayed not only the direction in which the camera is oriented but also the focusing state of the camera.

15

7. The camera control apparatus as defined in claim 1, further comprising:

a view-point direction survey section for storing the direction in which the operator desires to shoot the designated  
20 location,

wherein the camera-to-be-operated determination section determines a camera to be operated, from information as to whether or not an image can be shot in the direction designated by the view-point survey section, as well as from the angle between the

00450000-00450000

current shooting direction of the camera and the direction of an imaginary line connecting the designated location with the center of the camera symbol.

5           8.     The camera control apparatus as defined in claim 7, wherein there is displayed information about the direction in which the operator desires to shoot.

9.     The camera control apparatus as defined in claim 10 1, further comprising:

an angular-shift-time calculation section for calculating the time required for the camera to pan toward the designated location;

15    a zoom storage section for grasping the degree of zoom of a plurality of cameras;

a zoom-shift time calculation section for calculating the time required for a camera to zoom in order to display an image of the designated range; and

20    a zoom range display section for displaying, in the camera control region, a range to be zoomed,

wherein the camera-to-be-operated determination section determines a camera to be operated, from the time required for the camera to pan toward the designated location after the operator has designated a desired range in the control region and the time

required for the camera to zoom in or out for attaining focus on the designated range.

10. The camera control apparatus as defined in claim  
5 1, wherein an image captured by the camera selected by the  
camera-to-be-operated determination section is displayed greater  
than images captured by other cameras.

11. The camera control apparatus as defined in claim  
10 1, wherein, when a camera most optimal for shooting the designated  
location is selected, an image captured by the thus-selected  
camera is displayed greater than images captured by other cameras.

12. The camera control apparatus as defined in claim 1,  
15 further comprising:

a zoom-scale determination section for determining the zoom scale of each of the cameras which have been examined as being optimal for shooting the designated location by the camera-to-be-operated determination section, in sequence in which the cameras are arranged.

13. A camera control method comprising steps of:  
displaying images captured by a plurality of cameras, a  
map relating to a location whose image is captured by the plurality

of cameras, camera symbols representing the locations of the cameras in the map, and directions in which the cameras are oriented;

selecting a camera optimal for shooting a location  
5 designated by an operator; and

controlling the selected camera such that the camera is panned toward the designated location.

14. The camera control method as defined in claim 13,  
10 wherein, from among the plurality of cameras, there is selected  
a camera involving a minimum angle between the direction in which  
the camera is currently oriented and the imaginary line connecting  
the center of the camera symbol with the designated location.

15. The camera control method as defined in claim 13,  
wherein the camera which is blocked by an impediment and cannot  
shoot the designated location is eliminated from candidates for  
selection of a camera to be operated.

20           16.     The camera control method as defined in claim 15,  
wherein, in the event of presence of an impediment in the area  
where the cameras are disposed, the impediment is displayed.

17. The camera control method as defined in claim 13.

wherein, from among the plurality of cameras, a camera which can shoot the designated location within the minimum period of time is selected on the basis of the time required for the camera to pan toward the designated location from the direction in which 5 the camera is currently oriented and the time required for the camera to zoom into the designated location, and the selected camera is panned toward the designated location and attains focus on the designated location.

10 18. The camera control method as defined in claim 17, wherein there are displayed not only the direction in which the camera is oriented but also the focusing state of the camera.

15 19. The camera control method as defined in claim 13, wherein cameras incapable of shooting an image from a direction desired by the operator are eliminated from candidates camera-to-be-operated.

20 20. The camera control method as defined in claim 19, wherein there is displayed information about the direction in which the operator desires to shoot.

21. The camera control system as defined in claim 13, wherein, from among the plurality of cameras, there is selected

004760-00000000

a camera which can shoot the designated range within the minimum period of time, on the basis of the time required for the camera to pan toward a designated range from the direction in which the camera is currently oriented after the camera has received an instruction for designating a desired range from the operator, and the time required for the camera to attain focus on the designated range from the range on which the camera is currently focused, and the selected camera is panned toward the designated location, to thereby attain focus on the designated range.

10

22. The camera control method as defined in claim 13,  
wherein, when cameras optimal for shooting the designated  
location are selected, images captured by the cameras are  
displayed at respective scales, in sequence in which the cameras  
are arranged.